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A WEEKLY EPITOME
OF
CURRENT MEDICAL LITERATURE.

PHARMACOLOGY AND THERAPEUTICS.

(333) Koch's Treatment of Tuberculosis: General Effects.

IN a clinical lecture delivered at the Hôpital Laennec on December 14th Professor Cornil (*Semaine Médicale*, December 17th) gave the results of further observation of the cases in which he had employed Koch's treatment. With regard to the three patients in whom the first injection had caused albuminuria—in two of them there was then (a fortnight after its first occurrence) no trace of albumen in the urine; the third still showed slight traces thereof, but it is not quite certain that he was entirely free from it before the treatment was begun. In the case of another patient suffering from diabetes and calculous pyelo-nephritis, as well as tolerably advanced phthisis, the urine became rather less purulent after the injection of very small doses. These cases seemed to M. Cornil to show that the renal complications caused by Koch's fluid are merely temporary, and that, even when the kidneys are diseased, the treatment is not absolutely contraindicated, although it must be used with extreme care. With regard to the reaction, Professor Cornil pointed out that it is a mistake to suppose that after the injection the temperature simply rises to a greater or less height, and then falls to the normal point. In his cases the temperature was taken in the rectum every two or three hours. In one case an injection at 11 A.M. was followed at 7 P.M. by a temperature of 39.4° C. Two hours later it had fallen to 37.4° C., but on the following day, though no further injection had been given, it again rose to 39.5° C., afterwards falling gradually and with slight oscillations to normal. The type was that of quotidian fever, lasting two days. In a second case an injection of 3 milligrammes sent the temperature up to 40.8° C. on the second day, to 39° on the third day, and to 39.5° on the fourth, the record being almost normal in the intervals. It was, in fact, an example of intermittent quotidian fever lasting three days. In a third case, that of a child, the injection at first caused a slight fall of temperature, and it was not before the third day that it reached 39.4°, after which defervescence took place gradually. These three patients suffered from circumscribed lupus of the face, and were all in good health, without any abnormality of temperature before the treatment. M. Cornil insists that these irregularities in the course of the reaction should be borne in mind, and that a sufficient interval should always be allowed between the injections so as to avoid any danger of cumulative action. In a patient suffering from lupus erythematosus the general action was extremely intense, while there was no sign of local reaction. In six patients suffering from syphilitic lesions, inoculated by M. Humbert in the Hôpital du Midi, no reaction took place. M. Cornil then gave a summary of the results of M. Hénocque's spectroscopic examination of the blood (see abstract, p. 98), and expressed the opinion that the amount of oxyhæmoglobin gives a fair measure of the effect of the injections, and adds that it cannot be doubted that where it is diminished the patient's general condition becomes worse, and it may be concluded that the injections are doing harm. While not venturing as yet to pronounce a final judgment on the value of the method, Professor Cornil says that with proper care there is little risk of doing any harm to patients by the injections; that in certain forms of tuberculosis, notably in lupus, "appreciable improvement" is produced; and that therefore a further trial of the treatment is justifiable.

PROFESSOR ROSENBACH, of Breslau, gives an account of his observations on the effects of Koch's remedy in fifty-six cases under his own care (*Deutsche med. Wochenschr.*, No. 49, 1890). With regard to its diagnostic value, he says that in a number of cases in which there was doubt as to the nature of the disease the injections caused general and local reaction. In one of these cases, in which there was no sign of phthisis beyond occasional crepitation in the right supraspinous fossa, sputum containing a large number of bacilli was brought up for the first time after the injection of 1 centigramme of the fluid; the crepitations also became more frequent and more obvious. In another case with suspected tuberculous disease of a joint, during the reaction a circumscribed spot was found in the lung where there was crackling on inspiration and well-marked pleuritic friction, while in the joint itself no effect was produced. In a patient with supposed tubercle of the intestine the injection caused a peculiar papular and vesicular eruption, anuria, and eight diarrhœic stools. In a case of Pott's disease during reaction there was a scarlatiniform rash, with pain in the vertebral column. Among the phthisical cases, those without fever and with absolutely unmistakable physical signs pointing to the lungs were as far as possible selected. In six cases of this kind Rosenbach observed remarkably slow defervescence of the reaction, but in four others the reaction was slow in showing itself, or very slight in its manifestations, although the lung disease was severe. When the kidneys are affected, the treatment causes increase of albumen and sometimes anuria. In some cases the urine after an injection was remarkably clear and much increased in amount. Jaundice was noticed in one case. In a considerable number of cases of laryngeal tuberculosis, of various degrees of severity, Rosenbach observed reaction in the larynx itself only once. He points out that if the injection

is made at a time when there is a natural tendency towards decrease of temperature the fever of reaction does not run so high as when the usual tendency to rise coincides with the effect of the injection.

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(334) Koch's Treatment of Tuberculosis: Its Results.

DR. UCKERMANN (*Norsk Magazin for Laegevidenskaben*, No. 12, 1890) after having attentively followed the clinical experiments with Koch's remedy made by Professor von Bergmann, Dr. Levy, and Professor Krause, states that he has not yet seen a single case in which the disease could be said to be really cured. In some cases of tuberculosis of the larynx, the injection seemed to have caused partial absorption of the infiltration with consequent diminution of swelling, but he thinks this can be explained by the effect of the remedy on the local circulation, and it by no means proves that the fluid has a specific action on the tuberculous tissues. In some cases of laryngeal phthisis the injections caused so much local swelling that acute stenosis seemed imminent, and, in fact, according to Uckermann, two deaths have actually occurred from this cause. In cases of tuberculous meningitis and miliary tuberculosis, the injections seemed to have a positively injurious effect, and hastened the fatal result. The cases of bone disease in which he saw the treatment tried in von Bergmann's clinic appeared to undergo no modification whatever, at least so long as Uckermann had them under observation (up to November 20th). With regard to pulmonary phthisis there is in Uckermann's opinion no doubt that the treatment is injurious, and even dangerous in the later stages of the disease; but even in less advanced cases the results are not infrequently unfavourable, and more deaths have occurred from hæmoptysis than under other methods of treatment. The injections cause no particular improvement in the physical signs. In short, Dr. Uckermann thinks that so far as has yet been proved the sole value of the new remedy is that it constitutes "a new and apparently reliable reagent on living tuberculous tissue." Even from this point of view, he says, it has the disadvantage of requiring to be used in fairly large doses in order to get a definite result, and its use under these conditions is not free from danger.

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(335) Koch's Treatment of Tuberculosis: Effect on the Blood.

DR. A. HÉNOCQUE (*Rev. Gén. de Clin. et de Thér.*, December 17th) has made a series of spectroscopic examinations of the blood in 22 patients under treatment by injections of Koch's fluid with the following results: In 13 the amount of oxyhæmoglobin was diminished, in 3 it was first diminished and afterwards increased, in 3 there was little or no change, and in 3 there was an increase from the first. Generally the oxyhæmoglobin was diminished to an extent equal to from 1 to 5 per cent. of the whole amount, which is, under normal conditions, from 13 to 14 per cent. The diminution was seldom observed before the second or third day, or even later, after the beginning of the treatment. It was observed in lupus as well as in pulmonary phthisis, and appeared to be in proportion to the number rather than to the strength of the injections. In a case of phthisis, the anæmia increased, under the treatment, to an extent represented by a diminution in the amount of oxyhæmoglobin, from 9·5 to 6·5 per cent. In the three cases in which the initial diminution was followed by subsequent increase of oxyhæmoglobin the patients were suffering from phthisis; in two of these cases the increase coincided with an improvement in the physical signs. In the three cases in which there was increase of oxyhæmoglobin from the beginning of the treatment the quantity rose in one (lupus) from 12 to 13, and in the two others (pulmonary phthisis) from 13 to 14 and 10 to 12 per cent. respectively. In the last case there was also an increase of body weight to the extent of two pounds in a week. There seems to be no relation between the intensity of the reaction and the variations in the amount of oxyhæmoglobin.

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(336) Koch's Treatment in Lupus.

PROFESSOR HASLUND, of Copenhagen, says, with regard to the new treatment generally (*Hospitalstidende*, December 17th), that from what he had personally seen at Berlin he had derived the impression that the phenomena produced by the injections had not been studied with sufficient accuracy. He had seen, during his visit to the German capital, from forty to fifty cases of lupus in different stages of the treatment, and in forty-one of them he had carefully followed the course of events for some time. He had not seen one single case of complete cure, though several cases had been shown to him as "cured." The absence of reaction after a certain number of injections does not, according to Haslund, indicate that the disease is cured. In many cases in which injections had caused no reaction recent nodules of lupus have been found both in the scars and in the adjoining tissues. The experiments on cutaneous tuberculosis, he thinks, should have been entrusted to competent dermatologists, whose practised eyes would have distinguished apparent from real cure. As illustrations of the errors which some observers have fallen into for want of this special knowledge, Haslund mentions that in one of the cases presented by Professor von Bergmann as not showing a single nodule, and, therefore, as being completely cured, he himself had the day before carefully examined the patient in conjunction with a German specialist, and they both had seen a large number of lupus nodules, apparently quite recent, round the edges of the cicatrix. Again, a hospital surgeon showed a patient with extensive lupus of the face, in whom he pointed out that on the borders of the diseased patch the skin, with the orifices of hair and sebaceous follicles, was absolutely normal; this he affirmed to be cured lupus. Haslund, on the other hand, asserts positively that these points had never been the seat of lupus at all. Lupus never heals without a scar, and, moreover, the cicatrisation of an ulcerated patch of lupus does not prove that it is cured. Errors of this kind, Haslund says, were very common in the Berlin clinics, especially at first. With regard to the local reaction in lupus, the description given by Koch and others cannot be accepted as altogether typical. These descriptions hold good only (1) in ulcerated lupus, (2) when the nodules have reached the surface of the skin, and (3) in non-ulcerated lupus hypertrophicus. When the nodules are not prominent, and in cases of sclerosing lupus, only redness and swelling of the surface are seen; there is no exudation, and hence no crusts are formed. When the swelling has gone down there is abundant desquamation of large scales. This type of reaction is also seen, after several injections have been given, in other cases of lupus which at first reacted in the ordinary way. According to Haslund the destructive action of the fluid is exerted only on the most superficial tuberculous tissue, and does not reach the deeper nodules. His conclusion is that Koch's method, whilst it is an auxiliary remedy of the highest importance, must be supplemented by surgical treatment (galvano-cautery, electrolysis, scraping, etc.). An enthusiastic German dermatologist

was heard to say that he would throw away his curette, but Haslund surmises that he will soon have to take it up again.

KROMEYER (*Deutsch. med. Wochenschr.*, No. 49, 1890), gives the following as the results of a microscopic examination which he made of a piece of lupus tissue excised by him seven and a half hours after an injection of Koch's fluid. The whole tissue was much swollen and reddened, and prominent beneath the epidermis were small yellow nodules. The normal skin on the borders of the lupus patches, in which there was no trace of inflammation before the injection, showed intense small cell infiltration, with other signs of acute inflammation. In the immediate neighbourhood of the lupus nodules the small cell infiltration was so pronounced as to amount to suppuration. In the epidermis and the papillary layer there were signs of breaking down. The capillaries and lymph vessels were greatly infiltrated; the latter contained much fibrin. The tuberculous nodules themselves were the seat of much more marked small cell infiltration than is usually found in similar slowly growing formations. All the appearances suggested suppuration of the tuberculous nodules. Kromeyer is of opinion that by combination with the metabolic products of the tubercles some new chemical substance is formed in the vicinity of the latter, which sets up inflammation around them, and leads to their breaking down into pus. He points out that under these circumstances in cases of disseminated tuberculosis of the lungs the use of the remedy is likely to prove highly dangerous, as around each focus of disease there is a zone of inflammation, and this may easily render a considerable portion of the lung useless for breathing purposes, or even cause pulmonary œdema.

AT a meeting of the Société Médicale des Hôpitaux on December 5th, Dr. Thibierge gave an account of his personal observations of the effects of Koch's treatment on lupus during a visit to Berlin (*Rev. Gén. de Clin. et de Thér.*, December 10th). He pointed out that in assuming that absence of reaction after a graduated course of injections meant complete cure of the disease, the German physicians had shown "more enthusiasm than clinical sagacity and dermatological experience." In a case which had reached this stage, Dr. Thibierge says the affected parts were covered with a continuous smooth epidermic layer, and the redness diminished day by day as the injections were continued. The patient was shown by one of von Bergmann's assistants as a case of "cure," on the ground of there being no longer any local reaction; but Dr. Thibierge, by stretching the integument so as to make the congestive redness of the adjoining region disappear, was able to bring into view small rounded nodules on the surface of the red patches, and especially at their circumference. They were not prominent, and were soft in consistence, and yellowish in colour like sugar candy—in short typical lupus tubercles. In all the patients whom he examined without exception, even in those who had been the first subjects of the experiments, and who, therefore had been under treatment for a period of nearly two months, Dr. Thibierge was able on minute examination to discover similar nodules. In view of these facts he thinks himself justified in asserting that there has been as yet not a single instance of even apparent cure of lupus by Koch's treatment. He acknowledges, however, that the injections have "a marvellous rapidity of action and a cicatrising influence on extensive and rebellious lupous ulcerations."

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(337) Koch's Treatment: Fatal Result.

IN a clinical lecture at the Hôpital St. Louis on December 13th (*Rev. Gén. de Clin. et Thér.*, December 17th), M. Péan gave the following account of a case under his care in which death had followed the injection of Koch's fluid. The patient was suffering from tuberculous disease of the ischium, and on admission was in so deplorable a condition that it was only after much hesitation that it was decided to try Koch's treatment. Immediately after the first injection (dose not stated) the temperature rose from 36·4° to 39·6° C. After the second one, which was given five days afterwards, it rose suddenly to 40·8° C, and the patient died. M. Péan said it was only fair to remember that this patient was doomed in any case, and he was in such a state of exhaustion that he could not possibly have borne any operation, "nor a dose, however infinitesimal, of any medicine whatever." He added that in other cases in which the disease was just as far advanced as in the patient in question no bad effect had followed.

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(338) Inoculations of Animal Virus in Phthisis.

DR. J. HILGARD TYNDALE has published a "preliminary report" on pulmonary phthisis treated by inoculation with animal virus (*New York Medical Journal*, November 29th) He states that during the four months previous to the date of his paper he had treated a series of six cases. They were all afflicted with actively destructive suppurative processes of the lung, and in all the presence of the bacillus tuberculosis was demonstrated. In all the temperature was persistently high, and all but one had suffered great loss of flesh and were very anæmic. The substance used for inoculation was the pure vaccine lymph obtained from the cow. It was procured from the vaccination department of the Board of Health. The details of the *technique* of inoculation are not given. With the inoculations were combined other general therapeutic measures directed to the formation of blood and fat, and lung gymnastics, consisting of deep inspirations at stated intervals. The latter Dr. Tyndale considers very important. The following is an abstract of the cases: (1) Man, aged 30, family history of phthisis; large cavity at right apex, temperature 102°, three hæmorrhages within six weeks preceding inoculation, bacilli and pus corpuscles in sputum, great weakness. After two inoculations no further hæmorrhages, no bacilli, cavity half previous size, strength and appetite excellent. (2) Man, aged 32, cavity at left apex, bacilli in sputum; after four inoculations strength and appetite normal, no moist *rdles*, but only cavernous respiration over the cavity, pleuritic adhesions disappeared. (3) Man, aged 34, great emaciation, temperature 101°, very weak, moderate-sized cavity under right clavicle, abundant bacilli in sputum. After three inoculations strength much increased, temperature 98°, cavity contracted and empty, no expectoration. (4) Man, aged 36, great emaciation, weakness, and anæmia, copious night sweats, temperature 103°, infiltration of left apex to about lower edge of third rib, and of right apex to fourth rib, a few bacilli. After four inoculations increasing strength, few pus corpuscles, no bacilli in sputum, expectoration much diminished, vesicular murmur in place of infiltration at right apex. (5) Man, aged 36, great emaciation and anæmia, temperature 103°, two medium-sized cavities in upper lobe of left lung, abundant bacilli. After four inocula-

tions strength and appetite very much improved, temperature 99°, expectoration diminished one-half, bacilli not very numerous, cavities of left lung unchanged. (6) Woman, aged 29, family history excellent, husband died of phthisis, very weak and pale, expectoration copious and purulent, very few bacilli, infiltration with dulness and moist *râles* at both apices. After three inoculations strength very much increased, better colour in face, dulness gone over both apices, expectoration muco-purulent. Dr. Tyndale's original intention was to allow six months to pass in each case after the final inoculation before publishing his results, but the appearance of Koch's paper compelled him to place them on record in order to save himself "from being looked upon as a plagiarist."

MIDWIFERY AND DISEASES OF WOMEN.

(359) Hæmophilia at the Menstrual Period.

Dr. C. Townsend (*Boston Med. and Surgical Journal*, November 26th) had recently under his care a healthy, well-developed and intelligent girl of thirteen. Some of her family were "bleeders." When an infant, the slightest bruise caused considerable subcutaneous effusion of blood. She bled freely when a little child when cut, or when bitten by insects. Epistaxis was frequent, but ceased after the safe and successful removal of mucous polypi. The joints never became swollen. A "show" appeared at thirteen, and three napkins were stained two weeks later. A week later serious menorrhagia set in, with blanching and faintness. Restlessness, nausea, vomiting, and intense thirst, with rise of temperature occurred; as she tossed in bed ecchymoses formed on the shoulders and elbows. As the patient became dangerously exhausted and as the vomiting continued, an enema (one raw egg with three ounces of peptonised milk) was given every three hours. Milk and lime water was administered when the vomiting ceased, and by the end of the week she took beef tea and milk as well as the enemata. The thirst did not diminish till about the fifth day of treatment. A tampon, inserted when the flooding was severe, was removed three days later; a slight discharge continued for nearly a week. At the end of ten days the girl was fairly well. It is not stated whether the troubles recurred at succeeding periods. Osler has already noted that in female members of hæmophilic families neither menstruation nor parturition is specially dangerous, and Dr. Townsend notes that other authorities are of the same opinion, according to their own experience.

BACTERIOLOGY.

(60) Bacilli in Arrow Poison.

Dr. Ledanteg (*Annales de l'Institut Pasteur*, Tome iv, No. 2, November, 1890) has an interesting paper on the arrow poisons used by the aborigines of the New Hebrides. He shows that it really consists of earth taken from the marshy ground and attached by a glutinous substance to a sharp, roughened arrow head, part of which is readily detachable and remains in the wound. The moistened earth is allowed to dry in the sun on the arrow point, the septic vibrio is killed by the drying, whilst the bacillus of Nicolaier, or the tetanus bacillus, which is found in the earth remains (thanks to the presence of its spores) capable of inoculating a wound; most of the patients on whom these poisoned arrow wounds are inflicted die from tetanus. The treatment that the author recommends for the wounds is based on the fact that Kitasato found that the solution of 1 per 1,000 bichloride of mercury, to which 0.5 per cent. of hydrochloric acid was added, destroyed the spores of the tetanus bacillus in thirty seconds. The wound is to be freely incised, even though it be in the abdominal wall, the tissues along the arrow path are to be carefully washed with the above solution, and every part that can have been in contact with the arrow should be trimmed away, the lotion being again thoroughly applied. Arrows prepared, and then kept for a long time, gradually lose their virulence, differing in this respect from those used by the American and African savages, who use vegetable poisons in place of those of telluric origin, such as the savages of Santa-Cruz and the New Hebrides use.

(361) Antagonism betwen Bacilli of Anthrax and "Blue Pus."

Dr. N. Blagovestchensky (*Annales de l'Institut Pasteur*, Tome iv., No. 2, November, 1890), gives an account of some experiments of which the following are the most important results. Simultaneous inoculations into the anterior chamber of the eye of the rabbit with the bacillus pyocyaneus and anthrax bacillus are accompanied by a destruction of the latter, the animal not succumbing to anthrax. Such inoculation, however, does not, except in very rare cases, render the animal immune from a later attack of anthrax. If the bacillus pyocyaneus and the anthrax bacillus are not inoculated at the same point the effect of the pycoyaneus bacillus is less marked and more of the animals die from anthrax. When anthrax spores are introduced along with the blue pus bacillus their development is interfered with. As the result of many experiments the author concludes that the sterilised products of the blue pus bacillus, can, as Woodhead and Cartwright Wood pointed out, influence to a certain degree the development of the anthrax bacilli, but that it requires a considerable quantity to effect this result, as where the inoculations were made into the eye simply, the quantity of blue pus products was small and many of the animals succumbed to anthrax. He also shows that even outside an animal the blue pus bacilli exercise a very marked inhibitory action on the development of anthrax bacilli, and he explains the fact that his experiments do not agree with Frendenreich's by the assumption that Frendenreich was working with cultivations of too great an age, as exceedingly young cultivations and very old ones (more than 5 weeks) appear to have little retarding effect on the development of spores or on the growth of bacilli. From other experiments that he made in moist chambers he is convinced that the substance that inhibits the action of the bacillus is a volatile substance that readily escapes on exposure to the air. He gives full descriptions of 67 most careful experiments all of which were made under Metchnikoff's guidance and advice.

DERMATOLOGY.

(362) Massage in the Treatment of Scleroderma.

Professor Breda (*Riv. Veneta di Scienze Mediche*, Tom. xi, 1889; *Monats. f. prakt. Derm.*, vol. xi, No. 9), used massage in treating a patient in whom a diffused eruption of sclerodermic patches was present over the whole body, after a long attack of rheumatism. Sixty-five sittings were given, which lasted an hour and-a-half, resulting in the perfect cure of the scleroderma. The general health of the patient was greatly benefited.